Comments on the neotypification of Protists, especially Ciliates (Protozoa, Ciliophora)
(see BZN **59**: 165–169)

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I am in agreement with my colleague Foissner that it is often impossible, when attempting to establish needed neotypification of species of ubiquitous or cosmopolitan microscopic protists (e.g. the ciliates; Finlay, 2002), to determine the exact or original type locality or, even if this is known and accessible, to guarantee the presence there of the same species at some particular later date. It follows that carefully studied material (considered by an expert to be identical) should be acceptable. New neotype material – when preserved on glass slides after proper fixation and staining – is to be favored over drawings or illustrations, often made long ago when only a few characteristics might have been known or thought important, even though the latter are acceptable under the Code as representing types for many organisms.

Proper neotype material, made available to workers around the world, will allow detailed three-dimensional re-examination of the specimens on the slide. Although today the modern techniques of electron microscopy and molecular studies are very helpful for analyses of taxonomic and evolutionary interrelationships among groups of protists, the morphological and anatomical details made visible – under light (including phase) microscopes of high magnification and high resolution – are still sufficient to differentiate morphospecies of the great majority of protists, certainly the ciliates (Lee & Soldo, 1992).

Further misidentifications and misnamings, still great problems in taxonomic protistology and thus biodiversity studies (Corliss, 2002) of these minute organisms, can be prevented by avoiding an over-rigid application of Article 75.3.6 of the Code, which requires that a neotype designation should provide 'evidence that the neotype came as nearly as practicable from the original type locality'. The words 'as nearly as practicable' provide the required degree of flexibility.

Additional references

Corliss, J.O. 2002. Biodiversity and biocomplexity of the protists and an overview of their significant roles in maintenance of our biosphere. *Acta Protozoologica*, **41**: 199–219.

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Lee, J.J. & Soldo, A.T. (Eds.). 1992. *Protocols in Protozoology*. 588 pp. Society of Protozoologists, Lawrence, Kansas.

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As an alpha-taxonomist working with protozoa, I fully agree with Foissner's opinion. Almost all protozoa, especially the ciliates, have been subjected to a billion years of distribution and migration and must now be considered to be fully